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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,649	07/14/2003	Steven Robert Hetzler	ARC9-2003-0015-US1	8646
55508	7590	05/11/2006	EXAMINER	
JOSEPH P. CURTIN, L.L.C. 1469 N.W. MORGAN LANE PORTLAND, OR 97229-5291			CHAUDRY, MUJTABA M	
			ART UNIT	PAPER NUMBER

2133

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/619,649

Applicant(s)

HETZLER ET AL.

Examiner

Mujtaba K. Chaudry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 45-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-25 and 45-65 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/14/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Applicants' reply was received March 16, 2006.

- Claims 1-25 and 45-65 are currently pending.
- Applicant is reminded to cancel non-elected claims in subsequent action.

Application is currently pending.

### ***Drawings***

The drawings are objected to because:

- Figure 1A, reference numbers 102, 103 and 104 need labels.
- Figure 1B, reference numbers 153, 154 and 155 need labels.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

### ***Specification***

The disclosure is objected to because of the following informalities:

- In the specification, claims and abstract Applicants seem to use the terms "minimum distance" and "minimum hamming distance" interchangeably. Examiner respectfully requests the language to uniform throughout to avoid confusions. Preferably, "minimum hamming distance" would be better.

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- Throughout the specification Applicants refer to copending applications. The corresponding application numbers and/or patent numbers should be written out in the specification.
- The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

### *Claim Objections*

Claim 1 is objected to because of the following informalities:

- The phrase, "...minimum distance..." in the claims should be replaced with "...minimum hamming distance..." Applicant is reminded to make this correction throughout the entire application. Examiner may not have pointed out all possible citing.
- It is not clear from the claim from where the "selecting a recipient array" is being made from.

Appropriate correction is required.

Claim 45 is objected to because of the following informalities:

- The phrase, "...minimum distance..." in the claims should be replaced with "...minimum hamming distance..." Applicant is reminded to make this correction throughout the entire application.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites relative terminology that renders the claim to be indefinite. For example, the phrase, "...based on a minimal performance impact..." is not exact since performance is relatively rated. Examiner suggests amending the claim or canceling it.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites relative terminology that renders the claim to be indefinite. For example, the phrase, "...based on a improved performance impact..." is not exact since performance is relatively rated. Examiner suggests amending the claim or canceling it.

***Allowable Subject Matter***

Claims 1-25 and 45-65 would be in condition for allowance once the minor informalities noted in the "Claim Objections" are rejections under 35 USC 112 are overcome. The following is a statement of reasons for the indication of allowable subject matter:

Independent claim 1 of the present application teaches a method for increasing failure tolerance of a storage system having a plurality of arrays, each array having a plurality of storage units, the method comprising steps of: selecting a recipient array; selecting a donor array from the plurality of arrays when a difference between a minimum hamming distance of the recipient array is greater or equal to 2; selecting a donor storage unit in the donor array; and rebuilding at

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least a portion of lost recipient information from the recipient array on the selected storage unit in the donor array. The prior arts of record do not teach nor fairly suggest the foregoing limitations. Particularly, the prior arts of record do not teach or suggest selecting a donor array from the plurality of arrays when a difference between a minimum hamming distance of the donor array and a minimum hamming distance of the recipient array is greater than or equal to 2. These limitations are not obvious over the prior arts of record and are believed to be novel.

Independent claim 45 recites similar limitations as those found in claim 1 and therefore is allowable as well.

Dependent claims 2-25 and 46-65 depend from independent claims 1 and 45 respectively and inherently include the limitations therein and therefore are allowable as well.

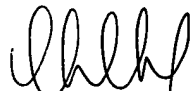
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***Conclusion***

Any inquiries concerning this communication should be directed to the examiner, Mujtaba Chaudry who may be reached at 703-305-7755. The examiner may normally be reached Mon – Thur 7:30 am to 4:30 pm and every other Fri 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Albert DeCady at 703-305-9595. The fax phone number for the organization where this application is assigned is 703-746-7239.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist at 703-305-3900.



Mujtaba Chaudry  
Art Unit 2133  
May 4, 2006



**GUY LAMARRE  
PRIMARY EXAMINER**